APPENDICES

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APPENDIX A-1

STORMWATER MANAGEMENT CODE

The Stormwater Management Code is now presented in the Redmond Community Development Guide, refer especially to the following sections:

20A.20	**Definitions (relative to 20E.90)**
20D.140	**Sensitive Areas**
20E.90	**Stormwater Management**
Appendix 20D-2	**Sensitive Area Reporting (Includes Flood Plain Mapping Details)**

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APPENDIX A-2

FORMS

ROUGH GRADING PERMIT

Clearing, Grading, and Stormwater Management

Project Name _____Permit #**CGP** _____

Description of Work: _____

Location: _____

Area Disturbed:_____ Earthwork Quantity:_____

Approval By Stormwater Division: _____ Date_____

Permit Received by _____ Date _____

TIME LIMITATION: Permit good for _____from date issue by Permit Center.

PERMIT FEE:

Permiting: Yes _____ No _____ Amount _____

Inspection: Yes _____ No _____ Amount _____

Total Fee _____

BONDS REQUIRED:

Restoration: Yes _____ No _____ Amount of Bond _____

Receipt No. _____ Date _____

Contractor (owner):_____

Address and Phone:

_____

Permission is hereby given to do the above-described work, according to the conditions herein and according to the approved plans and specifications pertaining thereto, subject to compliance with the Ordinances of the City of Redmond.

SPECIAL CONDITIONS ATTACHED YES____ NO____

Revised Date 1/2/92

CITY OF REDMOND

FLOOD CONTROL ZONE APPLICATION

FLOOD CONTROL ZONE

APPLICANT:

Name: _____
Company: _____
Address: _____
_____
Telephone: _____

OWNER (if different from applicant):

Name: _____
Company: _____
Address: _____
_____
Telephone: _____

PROJECT IDENTIFICATION AND SCHEDULE:

Type of Work_____ Construct _____ Reconstruct _____ Modify
Project Description_____
_____
Project Name_____
Construction to commence on_____
and to be completed by_____
Permit if sought for period_____

PROJECT LOCATION:

Tax parcel number_____
Project address_____
Located in _____ ¼ Section ___ T ___ R ___ E (WM)
Within the flood plain of_____
(body of water)

APPLICANT'S SIGNATURE

Applicant, by signature following, applies for a Flood Control Zone Permit and stipulates that Information (page 2 of this document) has been read and acknowledged:

_____ _____

Date

_____

Print

PERMIT: This document grants permission under provision of Chapter 86.16 RCW when and only when signed below and is subject to all conditions noted:
Minimum Finished Elevation shall be _____ NGVD, 1929

Permit Granted

_____ _____

City of Redmond Flood Control
Zone Administration

Date

Permit and Conditions (page 3 of this document)

Acknowledged_____ _____

Date

Print_____

STORMWATER DEVELOPMENT REVIEW
TRACKING FORM

Project:_____

Tax Parcel No.:_____

A. Approval Conditions **Date:**_____

File No.:_____

Notes:_____

_____

_____

B. Fees For Stormwater

1. Deposit:_____ Date Paid:_____
2. Plan Review:_____ Date Paid:_____
3. Permit Issue:_____ Date Paid:_____
4. Other Fees:_____ Date Paid:_____

Notes:_____

_____

_____

C. Construction Drawing Review

1. In For Review Date:_____
2. Review Status -- #1:_____ #2:_____ #3:_____
   #4:_____ #5:_____ #6:_____
3. Construction Plans Signed:_____
4. Bond Amount::_____ Received Date:_____

D. Approval Memo From Construction **Date:**_____

1. As-Built Status In Review:_____ Approved:_____
2. Bill of Sale Required:_____ Complete:_____
3. Asset Summary Required:_____ Complete:_____
4. Storm Monthly Billing Required:_____ Complete:_____
5. Other _____ Required:_____ Complete:_____

Notes:_____

_____

_____

PUBLIC STORMWATER FACILITIES
BILL OF SALE FORM
INSTRUCTIONS

PURPOSE:

To transfer ownership of a newly constructed public stormwater system to the City of Redmond.

PROPERTY DESCRIPTION:

The property description is not to be a legal description but a description of the utility improvements being "sold" to the City. The following are several examples:

All stormwater system mains and facilities constructed within and adjacent to "project name".

All stormwaterwater system mains and facilities constructed within a utility easement which legal description is attached as Exhibit "A".

SIGNATURE

The Bill of Sale shall be signed by the party who paid for the system improvements. Signature shall be notarized. The notary space for individuals or corporations as appropriate.

QUESTIONS:

If you have any questions about how to complete the form, please contact the Stormwater Engineering Division at 556-2840.

BILL OF SALE

FOR VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, the undersigned hereby conveys, bargains and sells and transfers to the City of Redmond, hereinafter referred to as the "City", all its present and future right, title and any interest in and to all of the following property:

to have and hold the same for itself, its successors and assigned forever, free of all liens and encumbrances, or interest of third parties.

The undersigned, on behalf of itself and its successors, and assigns covenants and agrees that the undersigned is the owner of said property and has good right and authority to sell the same and that it will, and does, hereby warrant title to said property and agrees to defend and hold harmless the City, its successors and assigns, against all and every person or persons whomsoever lawfully claiming any right, title, or interest in or to the same.

The undersigned warrants that the above-described property is in good operating condition and repair; that the undersigned has not received any citation or warning to the effect that these assets do not comply with all governmental laws or regulations; and further covenants and agrees with the City to replace, repair and correct any defect in work or materials in respect to the personal property subject to this Bill of Sale arising during a period of _____ year(s) from the date of this Acceptance, without cost to the City.

DATED this _____ day of _____, 19 _____.

By _____
Its _____

STATE OF WASHINGTON)
) ss.
COUNTY OF _____)

I certify that I know or have satisfactory evidence that _____ signed this instrument, acknowledged it to be his/her free and voluntary act for the uses and purposes mentioned in the instrument.

DATED this _____ day of _____, 19 _____.

_____
NOTARY PUBLIC
My Commission Expires: _____

STATE OF WASHINGTON)
) ss.
COUNTY OF _____)

I certify that I know or have satisfactory evidence that _____ signed this instrument, acknowledged it to be his/her free and voluntary act for the uses and purposes mentioned in the instrument.

DATED this _____ day of _____, 19 _____.

_____
NOTARY PUBLIC
My Commission Expires: _____

STORMWATER ENGINEERING DIVISION

DEVELOPER EXTENSION ASSET SUMMARY

Project Name: _____

Developer: _____

Contractor: _____

****

PUBLIC STORMWATER SYSTEM CONSTRUCTION COSTS

Land $_____

Pond Construction $_____

Pipe Storage Size _____ & Length_____ $_____

Water Quality Type _____ $_____

Stormwater Mains and Appurtenances:

Main Size:	8"	12"	18"	24"	36"	Other ( )
Length:						
Type:						
Lineal Ft $:						
Main Cost:						

Stormwater Mains and Appurtenances Total $_____

Stormwater Total $_____

****

NOTES:

1. Include total cost of improvements including sales tax, engineering and administration.
2. As a separate instrument, a Bill of Sale has been provided for the above improvements.

(Please See Other Side)

I hereby certify that all bills pertaining to the installation of the improvements have been paid in full and that the above costs represent the true value of the improvements.

HERE AND IN WITNESS WHEREOF, the undersigned have hereunto set their hand and seal. DATED this _____ day of _____, 19____.

_____

_____

STATE OF WASHINGTON)
)ss
COUNTY OF KING)

On this day personally appeared before me_____to be known to be the individual _____ as described in and who executed the within and foregoing instrument and acknowledged that (he/she/they) signed the same as (his/hers/their) free and voluntary act and deed of the uses and purposes therin mentioned.

GIVEN under my hand and official seal this _____day of _____ 19____.

_____
Notary Public in and for the State of Washington, residing at_____
My Commission expires_____

APPENDIX A-3
STANDARD NOTES

CLEARING, GRADING AND TEMPORARY EROSION CONTROL PLANS

1. All work and materials to be per City of Redmond standards.

2. Keep off-site streets clean at all times. Flushing streets shall not be allowed. All streets should be swept.

3. Additional erosion/sediment control measures may be required by City of Redmond inspector.

4. When work is stopped/completed in an area, the City inspector may require post-construction erosion control including seeding or other measures.

5. Locations shown of existing utilities are approximate. It shall be the responsibility of the contractor to verify the correct locations to avoid damage or disturbance.

6. It shall be the responsibility of the contractor to obtain street use and other related permits prior to any construction.

7. All ground cover is to remain undisturbed outside of clearing areas.

8. The temporary erosion/sediment controls shall be installed, inspected and operating before any grading or extensive land clearing. These controls must be satisfactorily maintained until construction and landscaping are complete.

9. Tie impervious surfaces (roof, streets, driveways, etc.) to completed drainage system as soon as possible.

10. A preconstruction meeting with the Construction Division and all permits must be completed before start of construction.

11. Clearing limits shall be located by a licensed Civil Engineer or Land Surveyor.

STORMWATER SYSTEM PLANS

1. A pre-Construction meeting is required before any work commence on the site.

2. All surveying of clearing limits and construction staking shall be done by a licensed Civil Engineer or licensed Land Surveyor.

3. Before mass clearing of the site clearing limits an initial erosion control measures shall be inspected by the City.

4. Any work within an existing street shall not commence until the contractor prepares a Traffic Control Plan and receives approval of the plan from the City Transportation Division and City Construction Inspector.

5. At all times during construction the approved construction drawings and the City of Redmond Standard Specifications and Design Details shall be on site.

6. City of Redmond Survey monuments that are disturbed during construction shall be replaced as directed by the City Construction Inspections.

7. Stencil all on site storm inlets with “Dump no Waste Drains to Stream, Ground Water or Lake”.

8. Pipe bedding requirements shall conform to COR Standard Detail 201.

9. The soils engineer employed by the developer shall verify and subsequently advise the City that the installation of the paving section(s) conforms to his design. The project will not be accepted until the soils engineer provides the City with written documentation of this information.

10. Contractor is responsible for installing all signs and channelization per City of Redmond standards. Contractor shall lay out all signs and channelization, and then contact the Transportation Division at 556-2854 48 hours in advance of installation to verify layout.

11. All necessary signs and markings on-site, along property frontage, and at specifically designated off-site locations shall be provided by the applicant as required by the Transportation Division whether or not these are indicated on the construction drawings.

APPENDIX A-4

CITY OF REDMOND

CLEARING, GRADING AND STORMWATER MANAGEMENT PLAN REVIEW CHECKLISTS

Project Name:_____	Submittal Dates:	Review Dates/Initials:
Tax Parcel or Plat #:_____	_____	_____/_____
Engineer:_____	_____	_____/_____
Contact:_____	_____	_____/_____
Phone:_____	_____	_____/_____

Review Notes: I = Incomplete/Incorrect/Must be Addressed, C = Complete/Correct, N = Non-Applicable, [ ] = Reference, __/__/__ = 1st/2nd/3rd Review

REDMOND COMMUNITY DEVELOPMENT GUIDE

Plans shall conform to Section 20E.90.10-080 of Redmond Community Development Guide. The general headings listed below must be addressed.

__/__/__Erosion and Sediment Control
__/__/__Drainage Facilities
__/__/__Water Quality Control
__/__/__Water Quantity Control
__/__/__Stabilization of Disturbed Areas
__/__/__Protection of Adjacent Properties
__/__/__Maintenance
__/__/__Identification of Sensitive Areas and Associated Buffers
__/__/__Identification of Easements
__/__/__Accurate Description of Work Area
__/__/__Control of Pollutants Other Than Sediment on Construction Sites
__/__/__Source Control of Pollution
__/__/__Controlling Off-Site Erosion
__/__/__Other BMPs
__/__/__Separate Public and Private Drainage
__/__/__Limited Topographic Change
__/__/__Tree Preservation Plan

DRAWING FORMAT AND CONTENT

Plans shall conform with the standards in this Stormwater Notebook.

__/__/__ Construction Drawing Size - 22” x 34”.

__/__/__ Drawing Content - shall contain all information necessary to review the design and to construct the improvements.
__/__/__ Title Block/Drawing Title
__/__/__ Issue or Revision Date
__/__/__Section, Township and Range.
__/__/__Project Name & Phase
__/__/__Tax Parcel/Plat Number
__/__/__Legal Description
__/__/__Engineer Information - name, address, phone and contact.
__/__/__Owner Information - name, address, phone and contact.
__/__/__ Vicinity Map - showing the general location of the project.
__/__/__ City Approval Block - must be on every sheet at lower right hand corner.
__/__/__ Horizontal Scale - 1"=20'.
__/__/__ Vertical Scale - 1"=5'.
__/__/__ Vertical Datum - minimum of two (2) C.O.R. datum must be shown.
__/__/__ Horizontal Datum - minimum of two (2) C.O.R. datum and NAD 83-91 coordinates on two (2) minimum points at exterior lot/boundary corners must be shown..
__/__/__ North Arrow & Scale Bar - shown in the upper left hand corner of the drawings
__/__/__ Drawing Layout - shall be laid out to afford the maximum understanding possible.
__/__/__ Profiles of Storm Drainage Systems - required for public drainage systems and may be required for private systems where conflicts with other utilities are possible.
__/__/__ Profile Information - include existing and proposed grade, all utility crossings and crossings clearances, pipe slope, pipe size, pipe length, pipe material, manhole depths, inverts, etc.
__/__/__ Plan View Information - shall indicate and identify all existing and proposed features, utilities, street improvements and paving, and other features that will affect the design and construction of the site grading and the drainage system.
__/__/__ Engineer Stamp and Signed and Dated Consistently with Issued or Revised Date - drawings shall be stamped before submittal and review by the City.
__/__/__ Legend - identify line types and symbols used.
__/__/__ Property Data - shall include property lines with bearings and distances, right-of-way lines, parcel numbers, lot numbers, plat names, and street names.
__/__/__ Phased Project Drawings - depict all construction necessary to complete the phase (each phase shall be independently approved).
__/__/__ Standard Notes (see Appendix A-3).

MINIMUM DESIGN REQUIREMENTS, CLEARING, GRADING & TESC

Plans shall conform to the **Minimum Design Requirements** identified in the Stormwater Notebook.

__/__/__ Fully Identify Work - clearing and grading limits shown, with stockpile/staging areas and sequence of construction.
__/__/__Disturbed Area - in acres must be shown on the Clearing and Grading plans.
__/__/__Limits of Clearing - fenced with 42" orange safety fence or approved filter fence.

__/__/__Trees to Remain - shall be shown with the dripline designated (must have protective fencing at five (5) feet beyond the dripline if adjacent to cleared areas) - no grading or filling permitted within the dripline. Show pertinent information within 50' of clearing.
__/__/__Buffer Strips of Sensitive Areas.
__/__/__Steep Slope Setback
__/__/__Grades - show existing and proposed contours.
__/__/__Cut/Fill - shall not exceed 8 ft.
__/__/__Stabilization of Disturbed Areas.
__/__/__Stockpile location and ground slopes.
__/__/__Estimate of Earthwork Quantities.
__/__/__Timing and Stabilization of Sediment Trapping Measures.
__/__/__Silt Fence [COR Std 502] (no straw bale permitted - must use silt fence).
__/__/__Construction Entrance [COR Std 503].
__/__/__Clean Water Diversion - areas onsite and offsite that are not disturbed must be diverted away from disturbed areas.
__/__/__Dewatering Construction Sites – show sediment traps.
__/__/__Stabilization of Temporary Conveyance Channels and Outlets – no erosion for 10 year, 24-hour storm.
__/__/__Storm Drain Inlet Protection – inlet protection must be provided for all storm drain inlets within the construction vicinity.
__/__/__Temporary Swales and/or Trenches - show shape, dimensions, spot elevations every 50 feet, drainage area, channel stabilization treatment type and computations of flow and velocity (cannot exceed 4 fps without rip-rap lining) [COR Std 504].
__/__/__Check Dams - show detail, dimensions and quantity of rock protection. No straw bales allowed.
__/__/__Temporary Culverts - show drainage area, 1 ft minimum cover, type of pipe, length and diameter, and slope.
__/__/__Temporary Sediment Pond(s) - show size, bottom elevation, top elevation, cleanout elevation, outlet protection, drainage area, volume required, volume provided, cross-section through the dam, profile through the pond, spillway and consistent with calculations. Not allowed near future infiltration sites.
__/__/__Rip-rap Outlet Protection - show size of stone, quantity and stabilization fabric under stone [COR Std 620].
__/__/__Maximum open trench length = 300'.
__/__/__TESC performance bond posted.
__/__/__Construction Access Routes.
__/__/__Removal of Temporary BMPs.
__/__/__Preservation of Natural Drainage Systems.
__/__/__Sequence of Construction - describe how construction will proceed in order to limit erosion, include phasing if appropriate
__/__/__Standard Notes (see Appendix A-3).

SITE PLAN (All Proposed Information Must be Distinguished From Existing Information)

__/__/__Property Lines - including bearings and distances.
__/__/__Right of Way - including bearings and distances.
__/__/__Lot Numbers.
__/__/__Site Area - shown in square feet and acres.
__/__/__Streets - edge of pavement or curb and sidewalk, centerline, and name shown.
__/__/__Contours - (dashed lines for existing and solid lines for proposed) 1 or 2 foot interval (slopes 40% or greater may be shown with 5 foot contours).
__/__/__Onsite Features - easements, buffers, +40% slopes, etc.
__/__/__Offsite Information - all features within offsite areas that drain onsite, and all information within 20 feet of all property lines.
__/__/__Utilities (water, sewer, telephone, cable television, gas, power, etc.).
__/__/__All Utilities Easements Shown with Dimensions Labeled.
__/__/__Setbacks
    __/__/__Building
    __/__/__Steep Slope (in accordance with geo-technical recommendations).
    __/__/__Other_____

DRAINAGE BASIN MAP

__/__/__North Arrow
__/__/__Scale (larger engineering scale may be used as appropriate)
__/__/__Title Block
__/__/__Property Lines
__/__/__Proposed and Existing Contours
__/__/__Proposed Storm Drainage Inlets and Numbers
__/__/__Existing Storm Drainage
__/__/__Drainage Area to Each Inlets
__/__/__Drainage Area to SWM Facility
__/__/__Offsite Areas Draining Onsite
__/__/__Flow Path for Time of Concentration Computations
__/__/__Legend of Symbols
__/__/__Storm Drainage Table (include: inlet number, drainage area, rational method "C" factor and t_c,)
__/__/__Stormwater Management Data (include: facility number, drainage area and compensated area)
__/__/__Zoning
__/__/__Road and Stream Names

STORMWATER MANAGEMENT REPORT

DRAINAGE CALCULATIONS

__/__/__Rainfall Intensity (KCSWM Manual Fig. 3.5.1C - 3.5.1I)
- __/__/__6 month - 24 hr _____
- __/__/__2 year - 24 hr _____
- __/__/__10 year - 24 hr _____
- __/__/__25 year - 24 hr _____
- __/__/__100 year - 24 hr _____

__/__/__Pre-develop Condition
- __/__/__Pervious Area _____
- __/__/__Pervious Area Curve Number _____
- __/__/__Impervious Area _____
- __/__/__Impervious Area Curve Number _____
- __/__/__Time of Concentration _____(Show Calculation)
- __/__/__Drainage Calculation Results_____

__/__/__Post-develop Condition
- __/__/__Pervious Area _____
- __/__/__Pervious Area Curve Number _____
- __/__/__Impervious Area _____
- __/__/__Impervious Area Curve Number _____
- __/__/__Time of Concentration _____(Show Calculation)
- __/__/__Drainage Calculation Results _____

QUANTITY CONTROL

__/__/__Release Rate(s) [half of pre 2 yr. for post 2 yr., pre 10 yr. for post 10 yr. and pre 100 yr. for 100 yr.; riser rate of 0.2187 ft/min.; Tech. Ltr.]
__/__/__Storage Volume Required _____
__/__/__Storage Volume Provided _____
__/__/__Control Structure(s)
__/__/__Quantity Control Facilities

QUALITY CONTROL

__/__/__Water Quality Volume Required (6 month - 24 hr.) _____
__/__/__Treatment Volume Provided _____
__/__/__Control Structure(s)
__/__/__Quality Control Facilities

CONVEYANCE SYSTEM

__/__/__Storm Drain Computations - rational method (KCSWM Manual) for pipe sizing, include: "C" factor determination, time of concentration determination and flow calculations.
__/__/__Design Slope - 0.25% minimum and 20% maximum.

__/__/__Hydraulic Grade Line Computations – hgl for 10 Year must be 1' below overflow condition (allowances may be made near detention system or large bodies of water surcharge).
__/__/__Downstream Analysis - provide storm drain computations and hydraulic grade line computations for existing storm drainage systems which are being revised by changes to the drainage area or system expansion.
__/__/__Safe 100 Year Flow Conveyance - the provision of the 100 year storm flow shall not impact any buildings.
__/__/__Information presented in the calculations is consistent with plan.

STORMWATER MANAGEMENT PLAN

PLAN REVIEW

__/__/__Minimum Pipe Size - 8" minimum for public storm drain systems and 6" minimum for private systems.
__/__/__Pipe Data - pipe size, length, slope, and material labeled.
__/__/__Horizontal Clearance - 5 feet from all other utilities and structures, and 8 feet from trees (street trees may be closer than 8' with root barrier).
__/__/__Vertical Clearance - one foot from other utilities. 18" for sewer with storm above sewer.
__/__/__Rockeries/Retaining Walls - shall not cross or be near storm drain pipes. Exceptions shall only be approved where no alternatives exist. Any crossing of a wall shall be perpendicular to the wall and special construction techniques including steel casings may be required. No rockeries allowed over roof or footing drains
__/__/__Structure Data - structure number, structure type and/or size, type of cover, rim elevation, and all pipe inverts labeled.
__/__/__Structure Spacing - 350' preferred (400' may be allowed).
__/__/__Easements – shown with dimensions labeled. 20' minimum width. No obstructions allowed in easements.
__/__/__Drains Behind Sidewalk - required in all cut situations and at the base of slopes.
__/__/__Cleanouts Spacing - to be at bends, end of lines and at 100 ft o.c. (required in all cut situations and at the base of slopes).
__/__/__Cleanouts Specifications - shall be specified with Carson boxes or equal with ungasketted caps in soft area and traffic bearing in paved areas [COR Std 621].
__/__/__Footing/Foundation Drains - including pipe size, material, and cleanouts shall be connected to the storm drain system (shown as stubbed to lots only for plats).
__/__/__Roof Drains - including pipe size, material, and cleanouts shall be connected to the stormdrain system (shown as stubbed to lots only for plats). 6" minimum.
__/__/__Footing/Foundation Drains and Roof Drains - shall be connected at a structure only (private onsite structure or at the street).
__/__/__3 ft. Paved Area - around roof drain cleanout or catch basin Type 1A required.
__/__/__Tracer Wire – must be shown on roof drains from the building to the property line.

__/__/__Outfall Protection - sized for 10 year storm (unless otherwise specified by SWM Div.); provide: type, size dimensions and quantity of stone. Stone must be laid on approved filter fabric. Maximum allowable discharge velocity to rock outlet is 10 fps without special design [COR Std 620].

PROFILES (Required for Public System)

__/__/__Profile - pipes and structures.
__/__/__Other Utilities - labeled and designate size and type.
__/__/__Profile grades - show and label existing and proposed grades.
__/__/__Pipe Cover - 18 inches minimum.
__/__/__Pipe Profile Information - show invert and top of pipe, pipe size, pipe material, and design slope.
__/__/__Drop structures only allowed per approval of Stormwater Engineer.
__/__/__Grates: - through-curb inlets at sag curves, possible bypass points and every third inlet; Vaned Grates on Slopes > 5%; Herringbone otherwise.
__/__/__Utility Crossings - all crossings must be shown, label utility type, line size, invert of utility and storm lines and clearance between pipes (1 foot minimum vertical clearance and 30 degrees minimum crossing angle).
__/__/__Structure Profile Information - label type of structure, structure number, size, and pipe inverts.
__/__/__Berm Section - in accordance with geo-technical recommendation for open ponds.
__/__/__Public Storm Structure – with four feet (4') or greater from the top to the invert must be Type II catch basin. 5' for private structure. See Standard detail 608
__/__/__Type III catch basin required for structures with bottoms between 12' and 25'. See Standard Detail 615.

STORMWATER MANAGEMENT FACILITIES

UNDERGROUND DETENTION

__/__/__Runoff Determination - per DOE Manual, for the design storms as established by the Technical Committee review.
__/__/__Area Draining to SWM System, Bypass and Compensation Areas.
__/__/__Offsite Areas Draining on Site - generally do not need to be controlled but, must be safely conveyed.
__/__/__Detention Volume Computation - show volume required and volume provided. Stage/storage curve must match proposed facility.
__/__/__Controlling Orifice Computation - plans and computation must match.
__/__/__Control Structure - designed and detailed (plan view and cross section required) shall conform to COR Std 610 or equivalent.
__/__/__Profile of Detention Pipe or Vault.
__/__/__Structural Details and Vault Calculations (separate building division review and permit required).
__/__/__Inverts - show for all pipes entering and leaving control structure or vault.
__/__/__Vent - minimum 2" diameter for pipe detention systems.

__/__/__Maintenance Vehicle Access - required to both ends of detention pipes and two accesses to vaults (one near control structure).
__/__/__Maximum Distance Between Detention System Access Points - 100 feet and ladder access must be provided at all ends.
__/__/__Easement - 5' minimum around all public detention systems (20 foot minimum width).
__/__/__Fire Hydrant - within 100 feet of detention pipe systems 4 feet in diameter or larger, and for all vault systems over 1000 cubic feet of total volume may be required.
__/__/__Detention Pipe Note - "Detention pipes may be air tested before final acceptance".

INFILTRATION

__/__/__Soil Permeability Tests or Gradation per D.O.E. - two tests minimum or one for every 5000 square feet of infiltration system bottom area. Test must end up being not more than 20 feet from the final location of the infiltration system. Note on plans - to be verified by field observation.
__/__/__Soil Test - must be taken at the proposed bottom of infiltration system.
__/__/__Excavation or Boring - is required in the trench area to a minimum depth of 4 feet below the proposed bottom of the trench. Infiltration not feasible if evidence of ground water or bedrock/hard pan.
__/__/__Infiltration Bed - all infiltration system should be a minimum of 3 feet above the seasonal high water mark, bedrock, hardpan and impermeable layer.
__/__/__Setbacks
- __/__/__Minimum 500 feet from drinking water wells and springs, septic tanks and drain fields.
- __/__/__Minimum 20 feet down slope and 100 feet up slope of building foundations.
- __/__/__Minimum 10 feet from and NGPE and property line.

__/__/__Down Spout Infiltration System - shall be designed with overall project for typical lot with individual homes.
__/__/__Maximum Drainage Area
- __/__/__Down Spout Infiltration Systems - 5000 sq. ft.
- __/__/__Infiltration Basin - 50 acres.
- __/__/__Infiltration Trench - 15 acres.

__/__/__Infiltration System Location - may not be located in an area previously used as a sediment trap.
__/__/__Inflow to an Infiltration System - must first pass through a pre-settling BMP or a biofilter. Disturbed areas shall not drain to the infiltration system.
__/__/__Add the following note to the plan "The contractor shall construct infiltration systems only after the entire area draining to it has been stabilized".
__/__/__Filter fabric is required on all sides, top and bottom of infiltration trenches.
__/__/__Maximum Trench Length - 100 feet.
__/__/__Observation Well - one is required per trench.
__/__/__Provisions for the 100 year overflow path required.
__/__/__Maximum Ponding - in an open infiltration basins is 3 feet for the maximum storm entering the basin (not to exceed the 100 year - this includes headwater to pass storm flow out any overflow) 1 foot of freeboard is required to the top of the structure.

__/__/__Basins Side Slopes - shall not exceed 3:1.
__/__/__Infiltration Basin Berm - must use impervious material for berm and the berm must be 2 feet wide at the top for each foot in height as measured from the ponding area bottom.

BIOFILTRATION (See DOE Chapter III-6)

__/__/__Required Length - 200 feet minimum (may be reduced to 150 feet for redevelopment projects only).
__/__/__Designed Storm - 6 month - 24 hour storm, high flow bypass required unless otherwise designated.
__/__/__Maximum Velocity - 1.5 fps for the design storm.
__/__/__Swale Slope - 6% maximum. For slope less than 2%, biofilter must be lined with underdrain. For slope greater than 4%, check dams must be provided.
__/__/__Setbacks - no buildings or trees within 10 feet of the normal high water.
__/__/__Vehicle Access - required for all biofilters for maintenance.
__/__/__Easement - public systems shall be in tracts, or easements, unless approved during site review.
__/__/__Cross Section - show dimensions, design flow depth and 1 foot minimum freeboard.
__/__/__Vegetation Specifications - shall provide for water tolerant plants and shall address shading of vegetation. Biofilter planting shall be shown on the civil drawings and subject to approval from the Construction Division.
__/__/__Swales/Trenches - including, grading, slope, spot elevations (a minimum of every 50 feet and at both ends), bottom width, side slopes, and lining.
__/__/__No filter strips allowed.

WETPOND/DETENTION FACILITIES

__/__/__Setbacks - 20 ft minimum away from structure and ROW, and 50 ft minimum away from steep slope (15% or greater).
__/__/__Length/Width Ratio - minimum of 3.0. (Preferred)
__/__/__Interior Slope - maximum of 3H:1V (Preferred) 2:1 Below water surface OK.
__/__/__Permanent Pool - minimum of 6 months 24-hr release.
__/__/__Live Storage - maximum of 100 years 24-hr release.
__/__/__Berm Embankment - maximum of 6 ft. high. (Preferred)
__/__/__Toe of Embankment - minimum of 55 ft. from ROW.
__/__/__Factor-of-Safety - applied against overflow.
__/__/__Multi-Celled - minimum of 2 cells. (Preferred)
__/__/__Emergency Overflow - for open pond, shall be separated from pond outlet.
__/__/__ 5-Foot wide safety bench set at 1’ depth around perimeter of pond. Plant bench with wetland planting.
__/__/__ Natural shape preferred.

ADDITIONAL COMMENTS

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